CLAIMS:

1. A magnetic valve including a collar surrounding and defining a port and a plug movable from a first position within the port, in which the port is wholly closed by the plug, to a second position out of the port, in which the port is not wholly closed, and in which the plug and collar are magnetically attracted such that in the first position the plug is magnetically retained within the port, and wherein a first side of the plug has a convex shape.

2. A magnetic valve according to claim 1 which the first side of the plug has no flat surfaces perpendicular to the direction of material flow through the port.

3. A magnetic valve according to claim 1 or claim 2 in which the first side of the plug is conical.

4 A magnetic valve according to claim 3 in which the conical plug is hollow.

5. A valve as claimed in any preceding claim, in which a magnetic field is generated by the plug.

6. A valve as claimed in any of claims 1 to 4, in which a magnetic field is generated by the collar.

7. A valve as claimed in any preceding claim, in which a permanent magnet is the source of the magnetic field.

8. A valve as claimed in claim 7, in which the collar includes a plurality of permanent magnets disposed around the port.

9. A valve as claimed in any preceding claim, and including a limiter depending away from the collar which can engage the plug to limit the travel of the plug away from the collar in a first direction.

10. A valve as claimed in any preceding claim, and including a stop which prevents the plug being moved from the first position in a second direction.

11. A valve mechanism including a valve and an actuator to operate the valve, the valve being a magnetic valve including a collar surrounding and defining a port and a plug movable from a first position within the port, in which the port is wholly closed by the plug, to a second position out of the port, in which the port is not wholly closed, and in which the plug and collar are magnetically attracted such that in the first position the plug is magnetically retained within the port, and wherein a first side of the plug has a convex shape, the actuator including a member which, when the member is driven in a first direction, engages a side of the plug to move the plug from the first to the second position thereby opening the valve.

12. A valve mechanism as claimed in claim 11, in which the member and the plug are magnetically attracted, such that the plug is retained by the member when in the second position.

13. A valve mechanism as claimed in claim 11 or claim 12, in which a second side of the member opposite to the side which engages the plug has a convex shape.

14. A valve mechanism as claimed in claim 13 in which the second side has no flat surfaces perpendicular to the direction of flow of material through the port.

15. A valve mechanism as claimed in claim 13 or claim 14 in which the second side is conical.

16. A valve mechanism as claimed in any of claims 13 to 15 in which the second side of the actuator and the first side of the plug define a smooth outer surface.

17. A container having a valve, the valve being a magnetic valve including a collar surrounding and defining a port and a plug movable from a first position within the port,

in which the port is wholly closed by the plug, to a second position out of the port, in which the port is not wholly closed, and in which the plug and collar are magnetically attracted such that in the first position the plug is magnetically retained within the port, and wherein a first side of the plug has a convex shape.

18. A container according to claim 17 and having a valve according to any of claims 2 to 10.

19 A container according to claim 17 and having a valve mechanism according to any of claims 11 to 15.

20. A method of operating a magnetic valve having a collar defining a port and a plug magnetically retained in the port, the method including the steps of engaging an actuator member with a first side of the plug and driving the plug in a first direction out of the port, wherein a first side of the plug has a convex shape so as to help prevent material accumulating on the first side of the plug.

21. A method of handling a material using a container, the container having a valve, the valve being a magnetic valve including a collar surrounding and defining a port and a plug movable from a first position within the port, in which the port is wholly closed by the plug, to a second position out of the port, in which the port is not wholly closed, and in which the plug and collar are magnetically attracted such that in the first position the plug is magnetically retained within the port, and wherein a first side of the plug has a convex shape, the method including the steps of presenting the container oriented with the valve upwards to an actuator;

opening the valve with the actuator;

transferring the material into the container;

closing the valve;

inverting the orientation of the container to present the valve downwards to an actuator;

and opening the valve with an actuator.